

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014332**Date Inspected:** 25-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice W1/W2

B). Field Splice W2/W3

A). Field Splice W1/W2

The QAI observed the QC inspector Jesse Cayabyab perform a visual welding inspection on the longitudinal stiffener field splices identified as 1W-2W-D, S1 through S18. It appeared that the longitudinal stiffeners identified as S1 through S6 were marked by the QC inspector for general weld repair and grinding. The QC inspector also performed a Magnetic Particle Test on the CJP welds identified as S7 through S18 and at the conclusion of the testing the QAI observed no rejects were noted.

The QAI also observed the Ultrasonic Testing (UT) of the longitudinal stiffener field splices identified as WN: 1W-2W-D, stiffeners S14 through S18 and the testing was performed by the QC technician Tom Pasqualone utilizing a Krautkramer USN-52. Mr. Pasqualone also utilized the UT Procedure identified as SE-UT-D1. 5-CT-100 Rev.4 during the examination of the CJP. The QC technician performed the required longitudinal wave utilizing a 1" diameter transducer for base metal soundness and a .75 x .75 rectangular transducer to perform the shear wave testing during the testing for weld soundness. At the conclusion of this shift the QAI observed the QC technician noted two (2) CJP welds identified as S14 and S18 were marked as UT rejects.

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Later in the shift the QAI observed James Zhen, ID-6001 performing the weld repairs and grinding of the items marked by the QC inspector Jesse Cayabyab on the stiffeners S1 through S6. The welding was performed by Mr. Zhen utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-F1200A Rev. 1. The WPS was also used by the QC inspector as a reference to monitor and verify the Direct Current welding parameters and were noted as 131 amps.

B). Field Splice W2/W3

The QAI observed the automatic Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 2W-3W-C, Segment C2. The welding was performed by welding personnel Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042A-1 Rev. 0. The joint designation appeared to comply with AWS single-v-groove butt joint identified as B-U2a-G. The WPS was also used by the QC inspector Bernie Docena as a reference to monitor and verify the Direct Current Electrode Positive (DCEP) welding parameters which noted and recorded by the QAI as follows: 245 amps, 23.0 volts and a travel speed measured as 300mm per minute. The welding was performed in vertical position (3G) at an approximate incline of 22 degrees. The CJP welding was performed on the face "A" of the side plate field splice. The QAI inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters. In regards to maintaining the minimum preheat temperature of 65 degrees Celsius, utilizing electric resistance heating bands, the Contractor, ABF, has elected to maintain the preheat continuously through out the welding operation to comply with the requirements of Field Welding, Item C on page 334 of the Special Provisions.

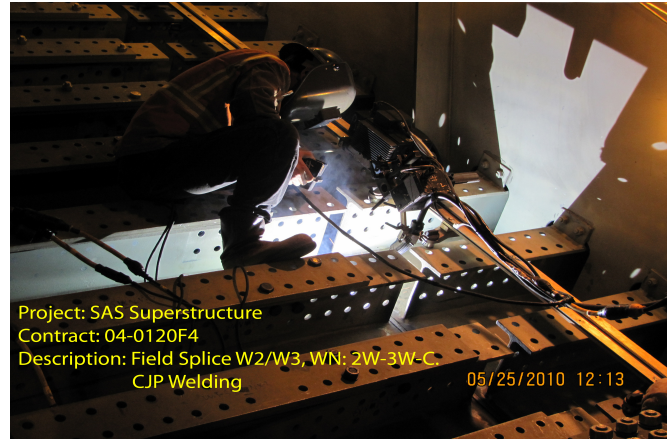
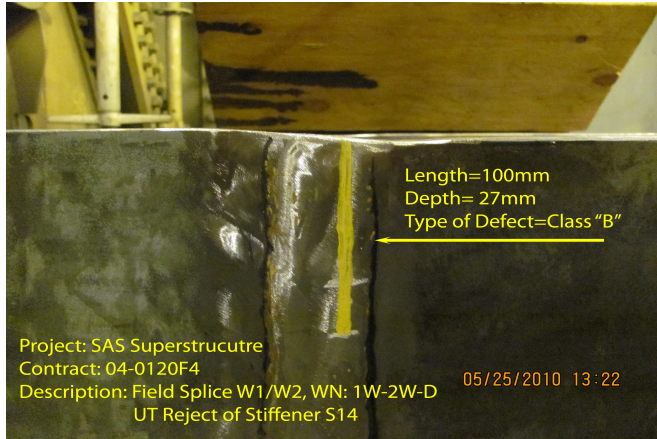
QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector's and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the FCAW-G process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift was not completed appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs, on page 3 of this report, illustrate the work observed during this scheduled shift.

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Summary of Conversations:

There were no pertinent conversations were discussed in regards to the project.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Reyes,Danny

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer